

Work Order ID 119184

May-12-14 12:52:03 PM

Black

\*119184\*

Page 1

Item ID: D3407-041

D 3 4 0 7 - 0 4 1

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

B 1 1 9 1 8 4

Item Name: Tow Ring

Stop

\*NS2\*

Start Date: 5/12/14

Start Qty: 12.00

\*12\*

Cust Item ID:

Required Date: 5/12/14

Req'd Qty: 12.00

\*12\*

Customer:

Reference:

Approvals:

Process Plan: MLS

Date: 14-05-12

Tooling:

Date:

Run Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3407

Rev E

100

\*100\*

Large Fab

Large Fab

Memo

0.00

0.00

12

14-05-26

ma

Large Fab

Weld D3407-1/5 using welding rod TIG174 as per Dwg D3407 & QSI 004  
A/R TIG174 ROD Batch: M 102576

110

\*110\*

QC9- Inspect visual per QSI004- Fusion Welds

0.00

QC

Quality Control

Memo

0.00

⑫

14-05-27

DAS  
9  
9-89

120

\*120\*

QC5- Inspect part completeness to step on W/O

0.00

QC

Quality Control

Memo

0.00

⑫

14-05-27

DAS  
9  
9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only 

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
Part No. _____			Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>				
NCR No. _____			Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>				
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>				
			Suspected Unapproved <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or non-conformance		Initial Chief Eng	Action Description		Sign & Date	Verification	QC Inspector
Design											
Doc/Data											
Equip/Tooling											
Handling/Pre											
Material											
Operator											
Offset/Setup											
Process											
Supplier											
Training											
Transport											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
				Bending <input type="checkbox"/>	Folio/Program <input type="checkbox"/>	Outside Dimensions <input type="checkbox"/>	Pressure/Forced <input type="checkbox"/>				
				Centre Not Concentric <input type="checkbox"/>	Grain <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>	Set-up <input type="checkbox"/>				
				Cracks <input type="checkbox"/>	Hardware <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>	Temperature/Cure <input type="checkbox"/>				
				Crimp/Kink/Ripple/Wave <input type="checkbox"/>	Inspection Incomplete/Unqualified <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>	Weld <input type="checkbox"/>				
				Cuffs <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	Part Moved <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>				
				Crushing <input type="checkbox"/>	Misaligned/off center <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>					
				Heat Treat <input type="checkbox"/>	Mislabeled <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>					
				Inspection Strip in Tube <input type="checkbox"/>	Misread <input type="checkbox"/>						
				Marks/Chatter <input type="checkbox"/>	Off-set <input type="checkbox"/>						
				Turning Sequence <input type="checkbox"/>	Out of Calibration <input type="checkbox"/>						
				Wave/Twist in Tube <input type="checkbox"/>	Out of Sequence <input type="checkbox"/>						

**Work Order ID 119184**

May-12-14 12:52:03 PM

**\*119184\***

Page 2

Item ID: D3407-041

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Tow Ring

Stop

**\*NS2\***

Start Date: 5/12/14

Start Qty: 12.00

**\*12\***

Cust Item ID:

Required Date: 5/12/14

Req'd Qty: 12.00

**\*12\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp0.00 27  
9-19

0.00 14/5/29

140

**\*140\***

QC

Quality Control

150

**\*150\***

Packaging

Packaging

155

**\*155\***

Powdercoat

Powder Coating

Identify as per dwg &amp; Stock Location: ST 463 0.00

Memo

0.00

Memo

15

DX 14-6-2

DAS

26

9-89

Black Sandtex(Ref:4.3.5.7) per QSI005 4.3

M120878.

START: 10:45 0.00

Memo

OVER. T: 320 0.00

FINISH: 11:15

12 14-5-28. DAS 34 9-89

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Date:



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

## Work Order update only

Work Order ID 119184

\*119184\*

Page 3

May-12-14 12:52:03 PM

Item ID: D3407-041

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Tow Ring

Stop

\*NS2\*

Start Date: 5/12/14 Start Qty: 12.00

\*12\*

Cust Item ID:

Required Date: 5/12/14 Req'd Qty: 12.00

\*12\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

\*NR1\*

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160

QC21- Final Inspection - Work Order Release

0.00

MLJ 140602

\*160\*

QC

Quality Control

Memo

0.00

MLJ 140602

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only 

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>				Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>		Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>		Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>		Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>	
Root Cause	Date	Step	Qty	Description of work order update or non-conformance		Initial Chief Eng	Action Description		Sign & Date	Verification	QC Inspector
Design											
Doc/Data											
Equip/Tooling											
Handling/Pre											
Material											
Operator											
Offset/Setup											
Process											
Supplier											
Training											
Transport											
Unapproved											
FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function		<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

# Picklist Print

May-12-14 12:53:34 PM

Page 1

Work Order ID: 119184

\*119184\*  
\*D3407-041\*

Parent Item: D3407-041

Parent Item Name: Tow Ring

Start Date: 5/12/14

Required Date: 5/12/14

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP Rev:A05.10.14 New issue KJ/EC  
IPP Rev:B 08-09-09 revE as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3407-1		Manufactured	No			100	Each	38.0000	1	12		**	

\*D3407-1\*

Stem

Location	Loc Qty	Loc Code
WA001	38	
103869	6	
113621	32	

D3407-5

Manufactured

No

\*D3407-5\*

Ring

Location	Loc Qty	Loc Code
WA001	61	
113168	10	
113761	20	
115097	23	
115804	8	

14-05-26 mal

14-05-26 mal

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_

Date: \_\_\_\_\_

Work Order update only 

Work Order: \_\_\_\_\_  
 Part No. \_\_\_\_\_  
 NCR No. \_\_\_\_\_

## DISPOSITION

Rework  
 Scrap  
 Use-as-is  
 Suspected Unapproved

## AGAINST DEPARTMENT/PROCESS

Skid-tube	Crosstube	Water Jet	Engineering
Machining	Small Fab	Prod. Eng. Coor.	Quality
Thermoforming	Finishing	Rec/Store/Packaging	Other
Large Fab	Composite	Supplier	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

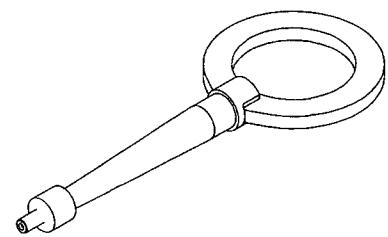
## FAULT CATEGORY

Landing Gear	General															
	<input type="checkbox"/>	Bending	<input type="checkbox"/>	Folio/Program	<input type="checkbox"/>	Outside Dimensions	<input type="checkbox"/>	Pressure/Forced								
	<input type="checkbox"/>	Centre Not Concentric	<input type="checkbox"/>	Grain	<input type="checkbox"/>	Over/Under tolerance	<input type="checkbox"/>	Set-up								
	<input type="checkbox"/>	Cracks	<input type="checkbox"/>	Hardware	<input type="checkbox"/>	Part Incorrect	<input type="checkbox"/>	Temperature/Cure								
	<input type="checkbox"/>	Crimp/Kink/Ripple/Wave	<input type="checkbox"/>	Inspection Incomplete/Unqualified	<input type="checkbox"/>	Part Lost/Missing	<input type="checkbox"/>	Weld								
	<input type="checkbox"/>	Cuffs	<input type="checkbox"/>	Instructions Incomplete/Unclear	<input type="checkbox"/>	Part Moved	<input type="checkbox"/>	Wrong Stock Pulled								
	<input type="checkbox"/>	Crushing	<input type="checkbox"/>	Misaligned/off center	<input type="checkbox"/>	Positioned Wrong	<input type="checkbox"/>									
	<input type="checkbox"/>	Heat Treat	<input type="checkbox"/>	Mislabeled	<input type="checkbox"/>	Power Loss/Surge	<input type="checkbox"/>	Other								
	<input type="checkbox"/>	Inspection Strip in Tube	<input type="checkbox"/>	Misread	<input type="checkbox"/>											
	<input type="checkbox"/>	Marks/Chatter	<input type="checkbox"/>	Off-set	<input type="checkbox"/>											
	<input type="checkbox"/>	Turning Sequence	<input type="checkbox"/>	Out of Calibration	<input type="checkbox"/>											
	<input type="checkbox"/>	Wave/Twist in Tube	<input type="checkbox"/>	Out of Sequence	<input type="checkbox"/>											
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>											
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>											
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>											

8 7 6 5 4 3 2 1

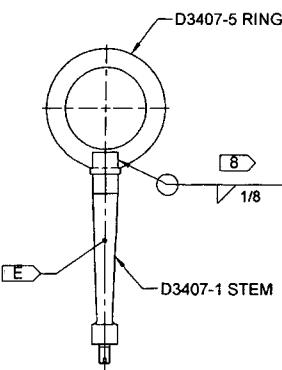
A

QTY -041	QTY -043	QTY -045	PART NUMBER	DESCRIPTION
X	X		D3407-041	TOW RING
	X		D3407-043	TOW RING
	X		D3407-045	TOW RING
1			D3407-1	STEM
	1		D3407-3	STEM
1	1	1	D3407-5	RING
		1	D3407-7	STEM



SHOP COPY  
RETURN BY  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 119184-MJ  
14-05-12

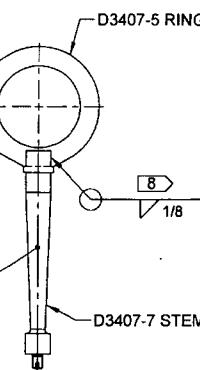
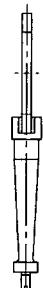
RELEASED  
05-05-12



D3407-041 TOW RING



D3407-043 TOW RING



D3407-045 TOW RING A

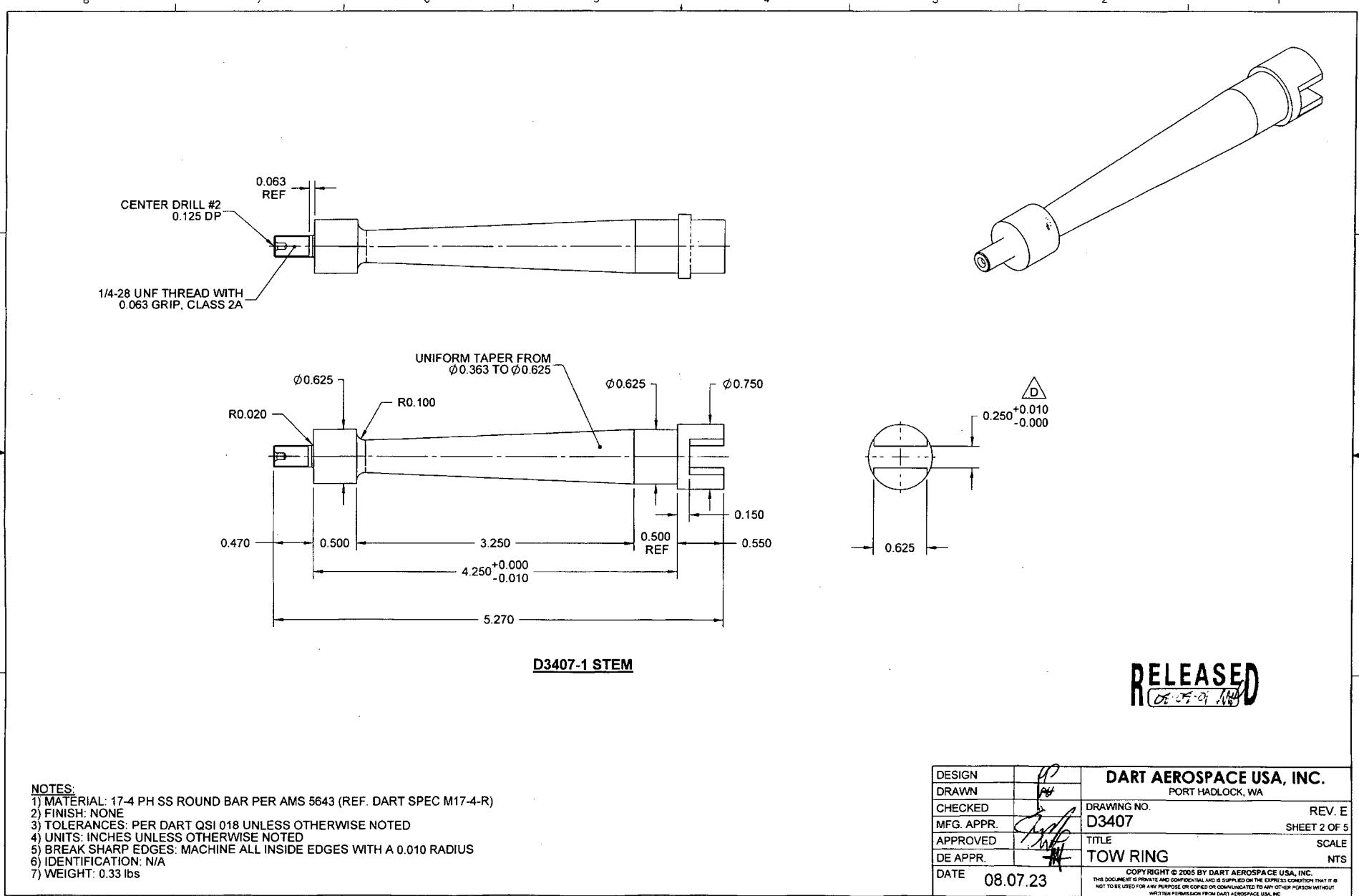
A NOTES:

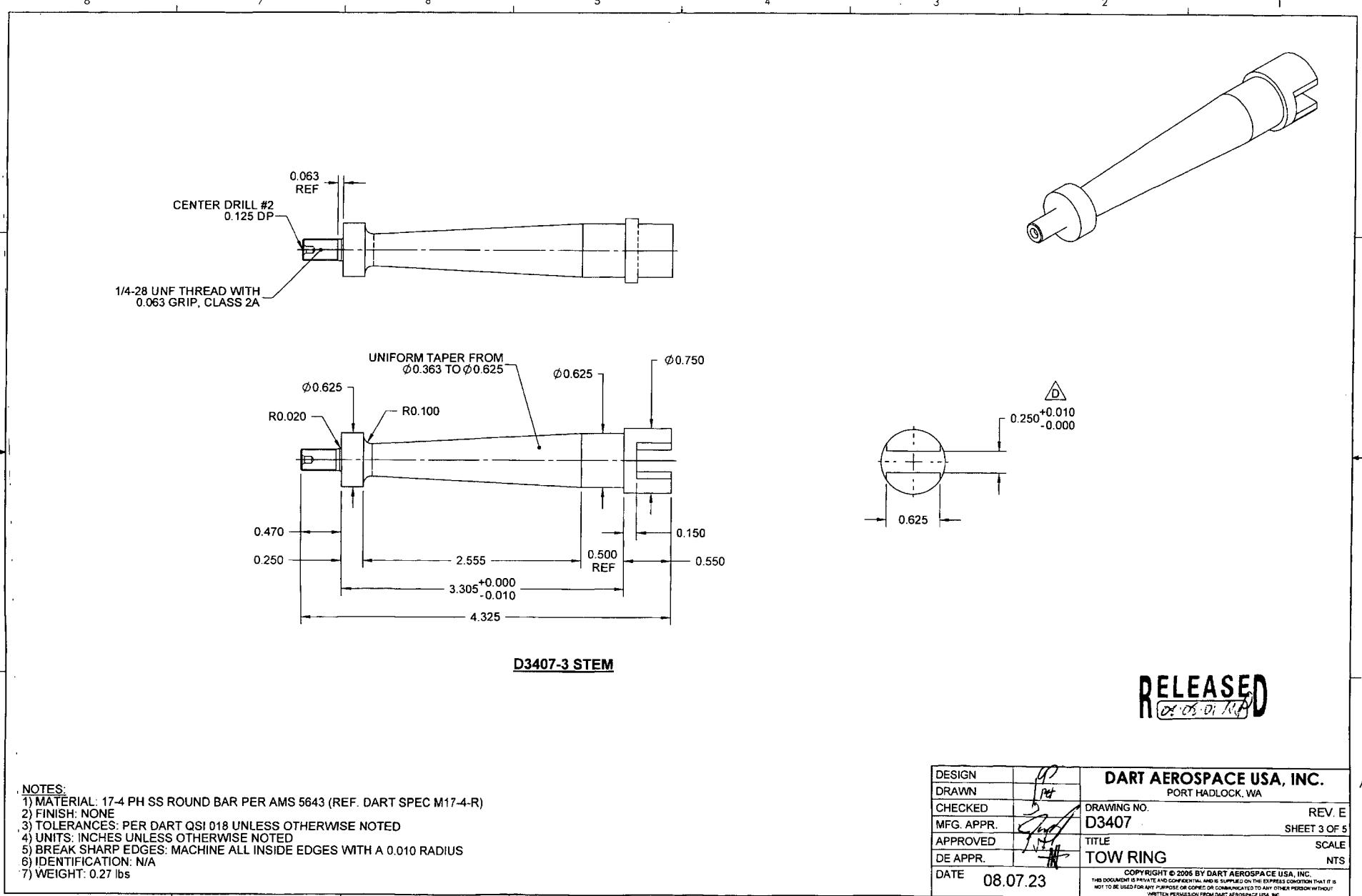
- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 (EXCEPT THREADS)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3407-XXX" USING BLACK FINE POINT PERMANENT INK MARKER A
- 7) WEIGHT: D3407-041 - 0.60 lbs, D3407-043 - 0.53 lbs, D3407-045 - 0.61 lbs
- 8) WELD PER DART QSI 004 ON ALL EDGES BETWEEN STEM AND RING

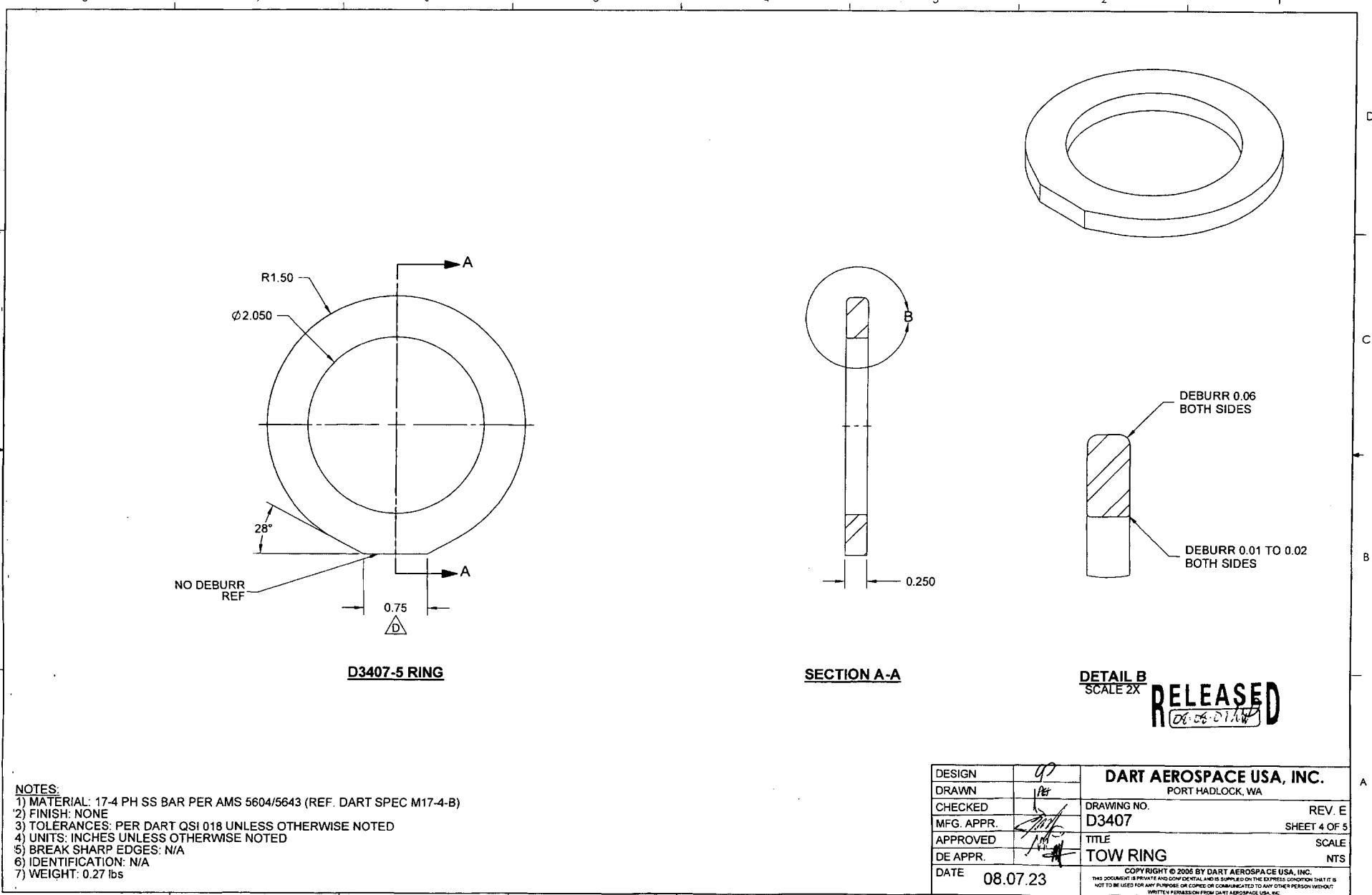
E	ADD D3407-045 (ZN B2-1, D8-1); ADD D3407-7 (ZN B6-5); REVISED D3407-5 TO ADD IDENTIFICATION (ZN A5-1); REASON: PRODUCTION FACILITY	PH	08.07.23
D	D3407-1/3 SLOT WAS ROUND NOW FLAT FOR ASSEMBLY WITH D3407-5 (ZN C2-2, C2-3); D3407-5 WAS ROUND NOW FLAT ON ONE END FOR ASSEMBLY WITH D3407-1/3 (ZN B6-4); REASON: PRODUCTION FACILITY	PH	08.04.07
C	-1/3 LONGER FOR FIT WWASHER	CP	05.09.08
B	UPDATE DIAMETER, THREAD CLASS ADDED	CP	05.06.17
A	NEW ISSUE	CP	05.03.16
REV.	DESCRIPTION	BY	DATE
DESIGN	10	DART AEROSPACE USA, INC.	
DRAWN	10	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3407	SHEET 1 OF 5
APPROVED		TITLE	SCALE
DE APPR.		TOW RING	NTS
DATE	08.07.23	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

8 7 6 5 4 3 2 1

1







DESIGN	<i>97</i>	DART AEROSPACE USA, INC.
DRAWN	<i>per</i>	PORT HADLOCK, WA
CHECKED	<i>[initials]</i>	DRAWING NO. <i>D3407</i> REV. E
MFG. APPR.	<i>[initials]</i>	SHEET 4 OF 5
APPROVED	<i>[initials]</i>	TITLE <i>TOW RING</i>
DE APPR.	<i>[initials]</i>	SCALE <i>NTS</i>
DATE	<i>08.07.23</i>	COPYRIGHT © 2006 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

